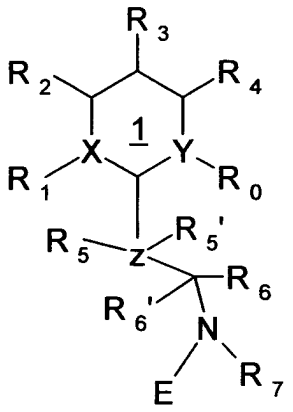
PHARMACEUTICAL DOPAMINE GLYCOCONJUGATE COMPOSITIONS AND METHODS OF THEIR PREPARATION

Abstract of the Disclosure

Hydrophilic transportable N-linked glycosyl dopaminergic prodrug compounds according to FORMULA V and methods of their use,



Formula V

wherein,

Ring 1 comprises an aryl or heteroaryl ring having 4 to 8 carbon atoms, among which atoms are counted "X" and "Y";

each of X and Y is optional; X, when present is either $-C(R_1)_2-$ or $-C(R_1)_2-$; Y, when present, is either $-CH_2-$ or $-CH_2-CH_2-$;

z, R_5 and $R_{5'}$ are optional, and when present z, R_5 and $R_{5'}$ together form a lower alkyl or a substituted lower alkyl moiety;

N is part of either an amine or an amide linkage;

E is a saccharide which forms a linkage with N through a single bond from a carbon or oxygen atom thereof;

R_1 and R_4 are selected form the group consisting of hydrogen, hydroxyl, halogen, halo-lower alkyl, alkoxyl, alkoxyl-lower alkyl, halo-alkoxy, thioamido, amidosulfonyl, alkoxylcarbonyl, carboxamide, aminocarbonyl, and alkylamino-carbonyl;

R_2 and R_3 are hydroxyl;

R_5 and R_6, when present, are selected from the group consisting of hydrogen, hydroxyl, alkoxyl, carbonyl, alkoxylcarbonyl, aminocarbonyl, alkylamino-carbonyl and dialkylamino-carbonyl; and,

R_6 and $R_{6'}$ are selected from the group consisting of hydrogen, hydroxyl, alkoxyl, carboxyl, alkoxylcarbonyl, aminocarbonyl, alkylamino-carbonyl and dialylamino-carbonyl,

with the proviso that Ring 1 is capable of binding to any of:

a dopaminergic receptor selected from the group consisting of a D1 receptor and a D5 receptor; a DAT transporter; a VMAT transporter; and,

with the proviso that E is capable of binding to a GLUT transporter selected from the group consisting of a GLUT1 receptor and a GLUT3 receptor.